Overview

The Cisco Catalyst 3020 Blade Switch for HP c-Class BladeSystem provides HP customers with an integrated switching solution from Cisco Systems. This solution provides Cisco resiliency, advanced security and enhanced manageability to the server edge while dramatically reducing cabling requirements. The Catalyst 3020 Blade Switch capitalizes on your current Cisco network infrastructure to reduce the total cost of implementation and ownership. By utilizing the advanced Cisco end-to-end management framework, customers can simplify current and future deployments reducing implementation and management costs.

Flexible to fit your needs - The Catalyst 3020 Blade Switch is designed with sixteen internal 1Gb downlinks and eight 1Gb RJ-45 copper uplinks. Up to four uplinks can be optionally configured as fiber SX links. Two uplinks can optionally be configured as internal cross-connects.

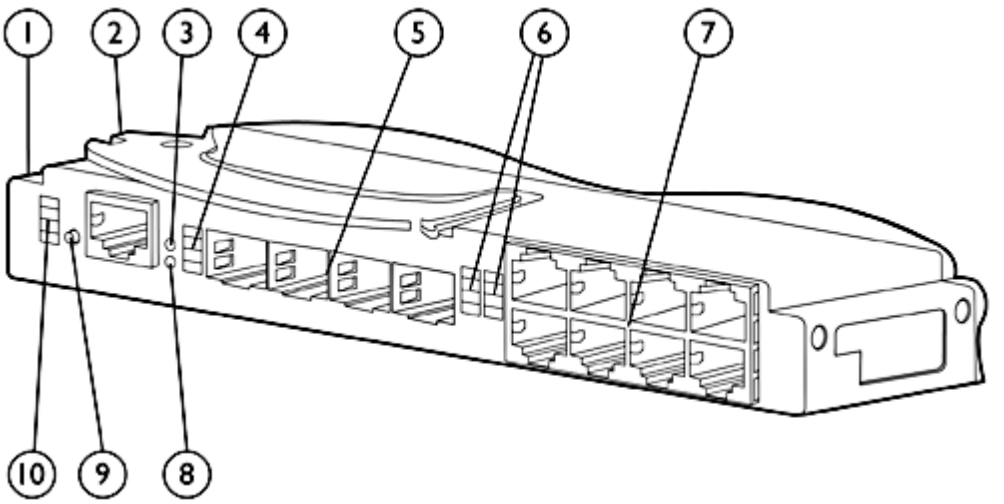

Figure 1 Catalyst 3020 Front View

1. Switch Module
2. Release latch
3. UID LED
4. SFP Module Port LED
5. SFP Module Ports for SX Fiber
6. Gigabit Ethernet Port LEDs
7. Gigabit Ethernet RJ-45 Ports
8. Health LED
9. Mode Button
10 Switch LED Panel

Models and Options

Models	
Cisco Catalyst 3020 Blade Switch for HP	410916-B21
Options	
1000Base SX Fiber SFP Module	378929-B21

At A Glance

Performance

- Wire speed switching on sixteen internal 1Gb ports.
- Wire Speed switching on eight external 10/100/1000BASE-T ports. (Two of these ports can be used as cross-connects to provide failover protection).
- Four external 10/100/1000 SFP based ports that can be configured in lieu of the 10/100/1000BASE-T ports to support Fiber SX SFP modules from Cisco Systems.
- One external console port.

Management

- CiscoWorks Software that includes multilayer feature configurations such as routing protocols, ACLs, and QoS parameters.
- IOS CLI support providing a common user interface and command set with all Cisco routers and Cisco Catalyst desktop switches.
- The Catalyst Blade Switch 3020 supports an embedded Remote Monitoring (RMON) software agent for enhanced traffic management, monitoring and analysis.

Security

- VLAN - Virtual Local Area Network is a logical network topology configured on top of a physical network topology which conserves bandwidth and improves security by limiting traffic to specific groups of devices.
- Supports Cisco's Identity-Based Networking Services (IBNS) which prevents unauthorized network access and insures that users get only their designated privileges.
- Compatible with Cisco Secure Access Control Server (ACS) so that user security profiles and authentication follow the user regardless of where they connect on the network.
- Access Control Lists (ACL's) are maintained in hardware for maximum performance and can be used to guard against denial-of-service and other attacks.
- 802.1x Port Security recognizes the MAC address of the device connecting to it and will set rights or limitations based on predefined security thresholds.

Compatibility

HP ProLiant Servers	HP ProLiant BL460c Server Blade
	HP ProLiant BL480c Server Blade
ProLiant BL c-Class Server Blade Enclosures	HP BladeSystem c7000 Enclosure
ProLiant BL c-Class Media Options	Cisco Fiber SX SFP Module

Models and Options

Required Network Cabling	10Base-T	Categories 3, 4 or 5 UTP (100 meters) EIA/TIA-568 100-ohm STP (100 meters)
	100Base-TX	Category 5 UTP (100 meters) EIA/TIA-568 100-ohm STP (100 meters
	1000Base-T	Category 5 UTP (100 meters) EIA/TIA-568 100-ohm STP (100 meters)
	1000Base-SX	50/125 μm Multimode Fiber, 400 MHz/Km (500 meters) 50/125 μm Multimode Fiber, 500 MHz/Km (550 meters) 62.5/125 μm Multimode Fiber, 160 MHz/Km (220 meters) 62.5/125 μm Multimode Fiber, 200 MHz/Km (275 meters)

HP Service and Support Offerings

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

NOTE: The Cisco Catalyst Blade Switch 3020 Limited Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support and 3-years software updates.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMware-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack services for the c7000 Enclosure cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP Supported Ethernet devices covered include the Ethernet Pass-Through Module, Fibre Channel Pass-Through Module, Cisco Catalyst 3020 Blade Switch and GbE2c Ethernet Blade Switch

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/carepack
NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: http://www.hp.com/hps
NOTE: Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Related Options

Service and Support Offerings (HP Care Pack Services)	NOTE: HP Care Pack services for the c7000 Enclosure cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP Supported Ethernet devices covered include the Ethernet Pass-Through Module, Fibre Channel Pass-Through Module, Cisco Catalyst 3020 Blade Switch and GbE2c Ethernet Blade Switch.	
	Hardware Support Services On-site Service	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic NOTE: Uplifts the Ethernet devices to the same level of warranty as the c-class enclosure	UE477E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE478E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE479E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UE480E
	Upfront Fixed Installation & Start-up Services	
	HP BladeSystem c-Class Infrastructure Installation & Startup service, Electronic	UE602E
	HP BladeSystem Enhanced Network Installation & Start-up service, Electronic	UE603E
	NOTE: For more information, customer/resellers can contact http://www.hp.com/services/bladesystemservices	

Shipping Dimensions	Length	352.55mm (13.88 in)	
	Width	270.00mm (10.63 in)	
	Height	120.65mm (4.75 in)	
Shipping Weight		2.0Kg (4.4lbs)	
Product Specifications Hardware	Performance	48 Gbps switching fabric Forwarding rate based on 64-byte packets: up to 36 Mpps 128 MB DDR SDRAM and 32 MB Flash memory Configurable up to 8192 MAC addresses Configurable up to 1000 IGMP groups and bridging entries Configurable maximum transmission unit (MTU) of up to 9018 bytes (jumbo frames)	
	Connectors and Cabling	Gigabit Ethernet uplink ports (Up to 8 external) • 8 external 10/100/1000BASE-T RJ-45 ports. Two of these ports can be configured to provide an internal crossover connection to an associated additional Cisco Catalyst Blade Switch 3020 • 4 external 10/100/1000 SFP or 10/100/1000BASE-T combo ports. The SFP cage supports Gigabit Ethernet Fiber SX SFP modules from Cisco Systems. Management console port: • RJ-45-to-DB9 cable for PC connections	
	Indicators	Total of 18 LEDs on the face place • 12 LEDs for uplink port status • 4 Switch status LEDs • 2 HP specific LEDs to indicate Health and UID status	
	Dimensions	Length	10.5in (267.7mm)
		Width	7.5 in (92.79mm)
		Height	1.1 in (27.94mm)
	Weight	1.27Kg (2.8 Lbs)	
	Environmental Ranges	Temperature Range	
		Operating Temperature	10 to 35 C (50 to 95 F)
		Storage Temperature	-40 to 70 C (-40 to 158F)
		Operating Relative Humidity (non-condensing)	10 to 85%
		Storage Relative Humidity (non-condensing)	5 to 95%
	Power Specification	12V @ 5A (60 W)	

Product Specifications Software	Security Features	IEEE 802.1x allows dynamic, port-based security, providing server authentication. IEEE 802.1x with VLAN assignment allows a dynamic VLAN assignment for a specific server, regardless of where the server is connected. IEEE 802.1x and port security are provided to authenticate the port and

	manage network access for all MAC addresses, including those of the server. IEEE 802.1x with an ACL assignment allows for specific identity-based security policies, regardless of where the server is connected. IEEE 802.1x with Guest VLAN allows servers without 802.1x clients to have limited network access on the Guest VLAN. Cisco security VLAN ACLs (VACLs) on all VLANs prevent unauthorized data flows from being bridged within VLANs. Port-based ACLs (PACLs) allow security policies to be applied on individual switch ports. SSH Protocol (v2), Kerberos, and SNMPv3 provide network security by encrypting administrator traffic during Telnet and SNMP sessions. SSH, Kerberos, and the cryptographic version of SNMPv3 require a special cryptographic software image due to U.S. export restrictions. Secure Sockets Layer (SSL) provides a secure means to use Web-based tools such as HTML-based device managers. Private VLAN Edge provides security and isolation between switch ports, helping to ensure that users cannot snoop on other users' traffic. Bidirectional data support on the Switched Port Analyzer (SPAN) port allows Cisco Secure Intrusion
Spanning Tree Features	IEEE 802.1D Spanning-Tree Protocol support for redundant backbone connections and loop-free networks simplifies network configuration and improves fault tolerance. Per-VLAN Rapid Spanning-Tree (PVRST+) allows rapid spanning-tree convergence on a per-VLAN spanning-tree basis, without requiring the implementation of spanning-tree instances. IEEE 802.1s Multiple Spanning-Tree Protocol (MSTP) allows a spanning-tree instance per VLAN and enables each VLAN to use a different uplink allowing better utilization of uplinks. IEEE 802.1w Rapid Spanning-Tree Protocol (RSTP) provides rapid spanning-tree convergence independent of spanning-tree timers. Unidirectional Link Detection (UDLD) and Aggressive UDLD allow unidirectional links to be detected and disabled to avoid problems such as spanning-tree loops.
Trunking Features	Cisco UplinkFast and BackboneFast technologies help to ensure quick failover recovery, enhancing overall network stability and reliability. PVST+ allows for Layer 2 load sharing on redundant links to efficiently use the extra capacity inherent in a redundant design. Dynamic Trunking Protocol (DTP) enables dynamic trunk configuration across all switch ports. Port Aggregation Protocol (PAgP) automates the creation of Cisco Fast EtherChannel® groups or Gigabit EtherChannel® groups to link to the upstream switch/router, or server blades Link Aggregation Control Protocol (LACP) allows the creation of Ethernet channeling with upstream switches that conform to IEEE 802.3ad. This feature is similar to Cisco EtherChannel technology and PAgP.
VLAN Features	4096 VLAN IDs are supported. VLAN1 minimization allows VLAN1 to be disabled on any individual VLAN trunk link. VLAN Trunking Protocol (VTP) pruning limits bandwidth consumption on VTP trunks by flooding broadcast traffic only on trunk links required to reach the destination devices.

Quality of Service Features	Wire rate performance for highly granular QoS functions. E.g. Granular rate limiting Asynchronous data flows upstream and downstream from the end station or on an uplink are easily managed using ingress policing and egress shaping. 802.1p CoS and DSCP field classification are provided, using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 TCP/UDP port number. Rate limiting is provided based on source and destination IP address, source and destination MAC address, Layer 4 TCP/UDP information, or any combination of these fields, using QoS ACLs (IP ACLs or MAC ACLs), class maps, and policy maps. Up to 64 aggregate or individual policers per port are allowed. Cisco control-plane and data-plane QoS ACLs on all ports help to ensure proper marking on a per-packet basis. 4 egress queues per port enable differentiated management of up to 4 traffic flows Shaped Round Robin scheduling helps to ensure differential prioritization of packet flows by intelligently servicing the egress queues. Weighted Tail Drop (WTD) provides congestion avoidance at the ingress and egress queues before a disruption occurs. Strict priority queuing guarantees that the highest-priority packets are serviced ahead of all other traffic. The Cisco Committed Information Rate (CIR) function guarantees bandwidth in increments as low as 8 Kbps.
Management Features	Cisco IOS CLI support provides a common user interface and command set with all Cisco routers and Cisco Catalyst desktop switches. Cisco Service Assurance Agent (SAA) support facilitates service-level management throughout the LAN. VLAN trunks can be created from any port, using either standards-based 802.1Q tagging or the Cisco Inter-Switch Link (ISL) VLAN architecture. Up to 1005 VLANs per switch and up to 128 spanning-tree instances per switch are supported. Cisco VTP supports dynamic VLANs and dynamic trunk configuration across all switches. IGMP snooping provides fast client joins and leaves of multicast streams and limits bandwidth-intensive video traffic to only the requestors. Remote Switch Port Analyzer (RSPAN) allows administrators to remotely monitor ports in a Layer 2 switch network from any other switch in the same network. For enhanced traffic management, monitoring, and analysis, the Embedded Remote Monitoring (RMON) software agent supports 4 RMON groups (history, statistics, alarms, and events). Layer 2 traceroute eases troubleshooting by identifying the physical path that a packet takes from source to destination. All 4 RMON groups are supported through a SPAN port, which permits traffic monitoring of a single port, a group of ports from a single network analyzer, or RMON probe. The Domain Name System (DNS) provides IP address resolution with user-defined device names. Trivial File Transfer Protocol (TFTP) reduces the cost of administering software upgrades by downloading from a centralized location. Network Time Protocol (NTP) provides an accurate and consistent timestamp to all intranet switches. Multifunction LEDs per port for port status; and switch-level status LEDs for

		system.
	CiscoWorks Features	CiscoWorks network-management software provides management capabilities on a per-port and per-switch basis, providing a common management interface for Cisco routers, switches, and hubs. SNMP v1, v2c, and v3 and Telnet interface support deliver comprehensive in-band management, and a CLI-based management console provides detailed out-of-band management. Cisco Discovery Protocol versions 1 and 2 enable a CiscoWorks network-management station for automatic switch discovery.
Management and Standards Support	Management Information Base (MIB) Support	BRIDGE-MIB (RFC1493) CISCO-CDP-MIB CISCO-CLUSTER-MIB CISCO-CONFIG-MAN-MIB CISCO-ENTITY-FRU-CONTROL-MIB CISCO-ENVMON-MIB CISCO-FLASH-MIB CISCO-FTP-CLIENT-MIB CISCO-IGMP-FILTER-MIB CISCO-IMAGE-MIB CISCO IP-STAT-MIB CISCO-MAC-NOTIFICATION-MIB CISCO-MEMORY-POOL-MIB CISCO-PAGP-MIB CISCO-PING-MIB CISCO-PROCESS-MIB CISCO-RTTMON-MIB CISCO-STP-EXTENSIONS-MIB CISCO-SYSLOG-MIB CISCO-TCP-MIB CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB CISCO-VLAN-MEMBERSHIP-MIB CISCO-VTP-MIB ENTITY-MIB ETHERLIKE-MIB IF-MIB (in and out counters for VLANs are not supported) IGMP-MIB OLD-CISCO-CHASSIS-MIB OLD-CISCO-FLASH-MIB OLD-CISCO-INTERFACES-MIB OLD-CISCO-IP-MIB OLD-CISCO-SYS-MIB OLD-CISCO-TCP-MIB OLD-CISCO-TS-MIB RFC1213-MIB (per the agent capabilities specified in the CISCO-RFC1213-CAPABILITY.my) RFC1253-MIB RMON-MIB RMON2-MIB SNMP-FRAMEWORK-MIB SNMP-MPD-MIB SNMP-NOTIFICATION-MIB SNMP-TARGET-MIB

		SNMPv2-MIB TCP-MIB UDP-MIB
	Standards	IEEE 802.1s IEEE 802.1w IEEE 802.1x IEEE 802.3ad IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports IEEE 802.1D Spanning-Tree Protocol IEEE 802.1p CoS Prioritization IEEE 802.1Q VLAN IEEE 802.3 10BASE-T specification IEEE 802.3u 100BASE-TX specification IEEE 802.3ab 1000BASE-T specification IEEE 802.3z 1000BASE-X specification 1000BASE-SX RMON I and II standards
Safety and Compliance	Safety Certifications	UL/CUL Recognition to UL/CSA 60950-1 TUV to EN 60950-1 CB report and certificate to IEC 60950-1 with all country deviations CE Marking
Electromagnetic Emissions Certifications FCC Part 15 Class A		FCC Part 15 Class A EN 55022 Class A (CISPR22 Class A) VCCI Class A AS/NZS 3548 Class A or AS/NZS CISPR22 Class A MIC Class A CE Marking

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